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AUTHOR Thomson, Jack E.
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ABSTRACT

Indices for quality of health care were developed for management of selected patient problems in a hospital setting. Analysis of physician staff members' patterns of patient management with respect to these indices led to individualized educational effort for each physician staff member. One year later, physicians' patterns of patient management had changed, and values of the indices for the hospital showed quantifiable improvement in the quality and efficiency of care. An educational researcher collaborated with a physician to interpret data and formulate researchable questions. The collaboration suggests an important role for an educational researcher in the development and implementation of criteria for quality of health care. (Author)

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EDUCATIONAL RESEARCH AND THE QUALITY OF HEALTH CARE:

A SYMBIOTIC RELATIONSHIP

Jack E. Thomson, Ed.D.
The Medical College of Wisconsin
561 North 15th Street
Milwaukee, Wisconsin 53233

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Background

Public scrutiny is being focused on the cost and quality of medical care. Third-party payors for medical care, Blue Cross, Blue Shield and the Social Security Administration being the largest, are looking for methods to contain the cost of medical care; and they have developed methods that scan payment records for "excessive" cost. Physicians, especially through the American Medical Association, are insisting that cost containment shall not impair the quality of medical care as they, the physicians, know it. Continued education is seen as the way for health professionals to maintain the quality of their professional services. Several health care professions are planning to require that their members participate in so many hours each year of continuing education to maintain membership in the professional organizations. Thus, cost of care, quality of care and continuing education to maintain quality of care have become interwoven problems. The federal government has entered the act in the form of legislation to establish Professional Standards Review Organizations (PSRO's). This legislation, known as the Bennett Amendment to HR-1, requires that by 1975 there shall be local organizations to which local health care facilities will be accountable for the quality of medical care they deliver. This legislation offers (threatens) that if the local health care community cannot develop acceptable mechanisms to review the quality of care in that geographic area, agents of the federal government will do it for them.

The medical profession has long had self-regulatory mechanisms to ensure the quality of its professional practice, and other health professions are following suit. To date, these methods have mainly looked at process, i.e., did the health professional at least once do all the things in treating a patient with a particular problem that the professions defines as the optimal process of care. The assumption here is that optimal process, usually defined by academic medicine, produces optimal outcomes for the patient. The present trend, and the burden of new fed-

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ED 004406

eral legislation and programs, is to develop measures of the quality of care based on patient outcomes, the results of care, rather than the process of care. But, there is no established methodology systematically to define, quantify, analyze and report outcomes of care; and this is one place where educational researchers can make a contribution.

This paper describes both the separate and collaborative roles of a physician investigator who had been Director of Medical Education (DME) in a 200-bed community hospital and of an educational researcher at a medical school in:

(1) developing quality of care indices based on the efficiency with which a physician obtained beneficial outcome for a patient's problem.

(2) indicating areas of educational need for each physician staff member based on the values of those indices.

(3) showing improvement in the quality and efficiency of care delivered by quantifying changes in the values of the quality of care indices.

Two points: First, this particular physician's approach is one rationale and method for development of quality of care indices (criteria). Second, while the collaboration here described was between a physician and an educational researcher, the process of collaboration, although not the details of the task, will apply to collaboration between educational researchers and any health professional.

Physician Role and Methods

It was the goal of the physician DME to improve quality and efficiency of health care delivered in his hospital. His specific objectives were:

(1) physician staff members whose management of selected categories of patient problems deviated seriously from the hospital norm for efficiency or from the conventional wisdom of medicine would alter their management patterns

(2) This alteration in physician behavior would be in the direction of improving the quality of care indices for selected patient problems in that hospital.

The physician investigator inspected patient charts at his hospital and sorted them into categories based on reasons for admission to the hospital, i.e., the patient's problem for which he was admitted. This method of establishing categories was devised to be more closely related to the patient's problem as the physician sees it at the time of admissions, and to the kind of care the patient receives upon admission, than are categories based on discharge diagnosis, i.e., codes from the International Classification of Disease (ICDA). Thus, educational effort based on findings for these categories of patient problems would be perceived by the physician staff members as timely and relevant to their own practice.

For his initial study the physician investigator chose patients admitted for congestive heart failure. He examined charts for the 14 cases of congestive heart failure admitted to the hospital in one year and recorded for each case (1) number of laboratory tests, (2) number of electrocardiograms, (3) number of chest X-rays, (4) number of days to patient improvement and (5) number of days of hospital stay. In his position as Director of Medical Education of the hospital, he held a private conference with each physician staff member who had treated congestive heart failure and showed him how his utilization (efficiency) of these five items of management of congestive heart failure compared with that of his peers and with the hospital norm. Identity of all save the physician in conference was withheld. Physician staff members were not told how to change their behavior or even that they should. The results of this simple but timely and relevant educational effort, the physician conference based on data taken from physicians' own practice, was that for the nine patients admitted for congestive heart failure the following year the mean value for all five indices was reduced by about one-third.

The physician investigator's effort was not research as we usually think of it with careful sampling and formal research design. Neither was it a conventional educational effort as we usually think of those with formal instruction in classroom or seminar. Yet observations were made and analyzed according to plan, and behavior changed. In a time when conventional didactic methods of physician continuing education are in disrepute because little evidence of changed physician behavior is forthcoming, the success of this simple educational method tailored to physicians' own practice points a way toward the future. It is most important to realize that this educational effort was based on the assumption that physicians want to practice good medicine. If educational efforts are timely and

relevant, physicians do not need to be bludgeoned into participation in continuing education by threats of relicensure examinations or expulsion from their medical societies.

The Collaborative Roles

Initially, the author worked with the physician investigator after the fact both as an educator and as a researcher. He helped the physician to interpret data from his studies and from that interpretation to state researchable questions the data implied. The physician was not aware that his individual conferences with hospital staff physicians were, in fact, an excellent educational effort in that he had specific and quantifiable patient care outcomes in mind as objectives and that his effort with the hospital staff had achieved those objectives. The author interpreted the methods and findings of the physician's investigation in the vocabulary and concepts of educational research. The physician investigator brought to the collaborative effort his knowledge of the workings of the health care delivery system including knowledge of practices and customs within health care facilities that permit one legally and ethically to collect data. The physician investigator, not the educational researcher, knew the meaning that any particular items of data would have to practicing physicians and their probable acceptance of different methods of data collection.

Utilizing both the physician's approach toward indices of efficiency and the educational researcher's concepts of education and data analysis, we have subsequently produced a methodology for quantifying the efficiency with which physicians obtain favorable outcomes for selected patient problems. This methodology has gained acceptance by a group of Director of Medical Education (DME's) in Milwaukee and by the Liaison Committee of The Medical College of Wisconsin - Medical Society of Milwaukee County. The method will be instituted on a pilot and developmental basis at Lutheran Hospital of Milwaukee later this year.

The physician investigator agrees that the findings of his study would never have been developed into the basis for a system to measure quality of care and need for continuing education without the input of the educational researcher. The educational researcher agrees that no system he might have devised for measuring quality of care would have gained acceptance in the health care community without the input of the physician investigator. We recognize our symbiosis.

To achieve this symbiotic relationship and to maintain the collaborative effort, both the physician and the educational researcher found they had to change some of their professional stance and procedure. From this experience the author has developed the following general statement of conditions that surround the symbiotic relationship.

(1) Practicing professionals are trained to treat each patient as an unique problem; they are not used to handling and interpreting masses of data. Educational researchers must bring them to the confidence they can do this.

(2) Health professionals who do have training in biostatistics and research design, and educational researchers in general, must come to see that developing indices of quality of care is not like classic research design.

(3) Health professionals who wish to pursue the development of quality-of-care indices need the assurance that someone with experience in data collection and analysis will advise them on technicalities, implications and cost of different procedures with data. Educational researchers must provide this advice and assurance.

(4) Health professionals in the relationship must come to believe that the data expert (educational researcher) will not try to shove read-made solutions down their throats but will work with them to develop solutions meaningful to themselves and to their professions. The educational researcher must be willing to work with the health professional's problem as the health professional sees it.

A further condition on the educational researcher is that he must be willing to work in a situation in which he is divested of most research methodology and statistical tools. Constraints on data and data collection for outcomes of health care are:

(5) Sampling approaches are not suitable; the eventual system to measure the quality of care must document the care rendered each patient.

(6) Random assignment of patients to treatment and to not-treated groups within a single health care fa-

cility is not possible; each patient expects and receives care.

(7) Random assignment of health professionals to an "instructed group" and a control group is not possible within a single health care facility. Health professionals talk with each other; this is one of the most effective methods of their continued education and is to be encouraged rather than prevented.

(8) In a single health care facility, incidence rates for any patient problem for which outcomes are being studied will be low; the researcher will not have the number of cases he would like.

(9) Statistically significant differences and extravagant statistical analyses such as factor analysis are unintelligible to those seeking evidence of quality care, e.g., third-party payors, and likely will not be accepted by them as evidence of quality.

The Educational Researcher's Role and Opportunity

Establishing indices for the quality and efficiency of health care more resembles problems in evaluation than classic design of research for clinical trial of drugs or than compiling descriptive statistics of the incidence, mortality and morbidity of diseases. The unique contribution of the educational researcher comes first from the point of view of educational research that one looks for outcomes in terms of changed behavior of human beings; educators more than other professionals have experience in identifying and stating behavioral objectives. The second source of the educational researcher's contribution is his experience in handling "dirty" data collected in situations where classic research design is not possible. Data collection for quality of care measures will usually be "dirty" in a classic research sense. And third, the educational researcher is more familiar than are other professionals with concepts and methods of evaluation that lead to decision-making as contrasted with pure research leading to scientific truth.

The disciplines of biostatistics and epidemiology notwithstanding, the health professions have no established procedures or experience to deal with masses of data resulting from the voluntary behavior of human beings that educational researchers face every day. The measures or indices of quality of care based on beneficial outcomes to patients are yet to be developed. As ed-

ucators and as researchers we have experience in searching for and specifying a wide range of observable human behavior to serve as outcome measures in research.

In this task of defining measures of quality care, educational researchers cannot themselves specify the outcomes that will serve as measures or indices. As educational researchers we have no substantive knowledge of the health care field. Our ignorance of the processes of health care is actually an advantage here. We will be able to work in collaboration with health professionals to encourage them to specify observable outcome behaviors meaningful to themselves and to face them with problems of coding (How many levels of that outcome behavior can you recognize?) and with problems of inter-rater reliability (Can you describe those levels of outcome behavior so accurately that someone else would code each instance the way you do?). These basic problems with data are practically unrecognized by health professionals.

It is here that educational researchers have an opportunity. It is our "clinical" experience in stating behavioral objectives, in problems of coding observations into data, in data collection, and in the interpretation of data that educational researchers have to offer health professionals struggling with problems of measuring the quality and efficiency of health care. And if we do this, gentlemen, the hospital bill we help reduce may be our own.